Reviewer’s report

Title: Lateral wedges with and without custom arch support for people with medial knee osteoarthritis and pronated feet: An exploratory randomized crossover study

Version: 0 Date: 28 Feb 2017

Reviewer: Richard Jones

Reviewer's report:

Thank you for the opportunity to review this article. This is a randomized crossover study investigating different types of lateral wedge insoles in individuals with medial knee osteoarthritis. The article is well written but I have some minor comments which would be useful for completeness:

Background second page - line 36. A recent paper from our group (Jones et al. 2016, JOR) has demonstrated that lateral wedges with arch supports are more comfortable and also reduce pain better than typical devices. It would be suggested that this is included in this section so that a full picture of the available literature is given.

Methods - line 36 - +4 on the FPI is the higher range of the normal foot at rest. Were all individuals above 4. The score of 4 resembles a slightly pronated foot and I wonder if this is a 'flat foot'.

Methods - Line 41 (starting Objective physical function ....). Why was the timed stair test chosen as an outcome measure?

Results - Line 50 - please provide the details on the reasons why the other individuals were not eligible. Why were individuals lost to follow-up (24 to 22)?

Results - Line 7 (starting indicated that they.....). The individuals mentioned that they preferred the first insole. This statement comes across that the individuals always had the lateral wedge with arch first?

Discussion - Line 58 (starting take together.....). This is where reference to the study mentioned previously would be valuable as this would give more evidence for your comments on the addition of the arch (Jones et al., 2016, JOR). The improved comfort and pain response would help support your arguments here.

Discussion - Line 34 (starting foot type as an inclusion....). Have studies previously used foot type as an exclusion criteria with lateral wedge insoles?

Discussion - Line 44 (starting sample of flat foot posture....). What about other foot postures and do you think that static alignment and the FPI is responsive enough to predict biomechanical and
clinical response? From previous research, it appears that rearfoot posture has more influence than more distal foot features.

Table 1 - The sex distribution does not match the numbers at the top of the table? The foot posture SD is 4.6, please provide the range of foot postures rather than the median. The KL4 line can be removed as this is not needed.

Table 2 - Put the population N in the table to reflect the numbers who completed Lateral wedge and the ones who completed lateral wedges plus arch support.

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